MASSACHUSETTS GREEN SCHOOLS INITIATIVE

The Green Schools Initiative was established through a partnership that began in 2001 between the Massachusetts Technology Collaborative (MTC), the agency that oversees the Massachusetts Renewable Energy Trust fund, and the Massachusetts Department of Education (MA DOE). The Trust was created in 1998 as a result of electric utility deregulation. It is funded by a small surcharge on electricity bills of non municipally-owned electric utility customers (roughly $0.50/month for the average home owner).

Looking for ways to optimize the impact of the Trust monies to support renewable energy growth and consumption, the MTC initiated a partnership with the MA DOE, which resulted in the creation of the Green Schools Initiative pilot program. The Initiative was designed to promote renewable electricity projects for K-12 public schools and test a process for incorporating energy efficiency and high performance design into school construction.

As the approval and financing agency for public school construction, MA DOE was especially interested in the partnership due to legislation passed in 2000 directing the MA DOE to augment state reimbursement rates for school construction funds by 2% for “energy efficient” school projects. MA DOE has not yet finalized regulations that define “energy efficient” school projects for purposes of obtaining the 2%. However, through the Green Schools Initiative, the MA DOE and MTC have cooperatively created and tested guidelines that address energy efficiency but also include “green” best design practices. So far, the 2% has been made available to the Green Schools Initiative pilot schools that meet these new guidelines.

The ultimate goal of the Green Schools Initiative is to finalize regulations that will require minimum high performance criteria for all K-12 new school construction and major renovation projects in Massachusetts while promoting incentives for school districts to build “certified” high performance green schools in accordance with the guidelines that are under development. The guidelines are based substantially on California’s Collaborative for High Performance Schools (CHPS) Best Practices Manuals, which are being modified to better match Massachusetts’ climatic conditions, codes and regulations, and environmental priorities.

Several activities are underway through the MTC/MA DOE partnership that will make final regulations possible:

1. MA DOE and MTC together are funding 18 Green Schools Initiative pilot projects that were selected on a competitive basis. These projects will serve as examples and will be sources of data to support the case for additional high performance schools. MTC is providing up to $130,000 in design funding and up to $500,000 in construction funding for 16 of the projects (2 are not eligible for MTC funding).

   The MA DOE has committed an additional two percentage point reimbursement for nine eligible projects that are certified by MA DOE and MTC as Massachusetts Green Schools. The smallest committed sum is just over $280,000 and the largest is $1.5 million for the various projects.

   Prior to the selection the pilot projects, the MTC also awarded 38 feasibility study grants ($20,000 each) for school projects across the state, and supported funding for 14 in-community high performance design workshops.

2. The MTC is funding a full time Green Schools Program Coordinator position for 3 years at the MA DOE.

3. Case studies are being prepared on the Green Schools Initiative pilot projects so that lessons learned can be shared with all who are interested. Some data are already available – for example, energy modeling predicts that on average, the pilot projects will exceed state energy code requirements by 30%. (Each project was required to demonstrate that it would beat the state energy code by 20%). The 30% savings translates to average projected savings of $70,000/yr in avoided utility costs.

4. The MA DOE and MTC are adapting the Collaborative for High Performance Schools (CHPS) Best Practices Manuals for Massachusetts. A Task Force of 10 industry professionals, representing the architectural, engineering, commissioning, green building, policy, and health related fields has been assembled to advise MTC and MA DOE on development of the green guidelines, including a scoring system, for the Massachusetts version of CHPS . This team has been working together since February of 2004. MTC also hired Architectural Energy Corporation (AEC) to help finalize the MA-CHPS Manuals.

5. To further validate claims about improved health and productivity in high performance schools and support planned regulatory efforts, MTC asked the National Research Council of the National Academy of Sciences to evaluate studies that support the linkage between high performance design and improved health and productivity. Preliminary results of this study will be available in October of 2005 with a final report available in late 2005/early 2006.

6. MTC is pursuing two different studies to document costs and benefits of green schools. First, an RFP was issued on March 1, 2005 requesting a consultant who can analyze the green cost premium of Green Schools Initiative pilot projects. The second study is a more theoretical one. A consultant is being asked to develop a cost-benefit analysis of the MA-CHPS pre-requisites (potential requirements for all schools seeking state construction funding) and a cost-benefit analysis of constructing a high performance school – certified in accordance with MA-CHPS guidelines.

The Future

Landmark legislation passed the Massachusetts legislature in 2004 creating a new Massachusetts School Building Authority (MSBA), which now has responsibility for financing school construction.

The legislation establishing the MSBA also lays out a timetable for revising and establishing new regulations regarding the school construction funding formula. According to the legislation, regulations will be proposed in January of 2006 and finalized by July of 2006. Efforts are underway at MTC and MA DOE to bring together a final version of MA-CHPS, the case studies on the pilot projects, health and productivity studies, and additional cost/benefit studies, so that all of the information is gathered in time to support green school regulations within the schedule established in the MSBA's enabling legislation. Ideally, all studies and data will be assembled by the fall of 2005.

At this time, six of the pilot projects are complete and occupied. Another six will be finished in 2005 and another four in 2006.

MA-CHPS and LEED NC – Similarities and Differences

A collaborative of state agencies and utility companies in California created a series of volumes on best practices for the design and construction of K-12 public schools. The series came to be known as the Collaborative for High Performance Schools or CHPS, and the authors of CHPS borrowed heavily from the format and content of the LEED New Construction green building

ratings system and reference guide. The point scoring system in CHPS is also very similar to the that in the LEED system.

CHPS authors also created new credits to address school-specific issues, which were absent from LEED NC guidelines. They also struck criteria that were inapplicable to schools.

The MTC licensed volumes 1 – 3 of the CHPS best practices manuals, gaining permission to alter the documents to fit code, climatic, and environmental conditions in Massachusetts. With the flexibility to adapt the guidelines, the MA DOE and MTC kept and built upon the strongest aspects of the California guidelines. Many of the guidelines address areas where LEED NC criteria are either not applicable or inadequate for the special schedules, occupants, and capital constraints associated with school buildings.

The first substantial difference between MA-CHPS (Massachusetts CHPS guidelines) and LEED is that there is no fee associated for application review or certification. More importantly, MA-CHPS addresses issues that are particularly relevant to schools including, but not limited to:

- Low-Emitting Materials testing criteria that are more strict than LEED's
- Acoustics criteria, setting minimum standards for background noise in classrooms
- Sizing of school parking lots based on the proportion of occupants that are of driving age
- Construction and debris waste diversion thresholds that are higher than in LEED
- Credits for policy and operation procedures that protect student health and ensure the longevity of HVAC, electrical, and hot water systems.

Up-front documentation is required for MA-CHPS certification, prior to the release of project bids. Many of the document requirements include specific language in bid specifications and affidavits from project architects, engineers, and consultants. It is expected that audits will be used in the future to verify execution of green criteria during and after construction.

Other LEED criteria were omitted from the MA-CHPS guidelines due to their inappropriateness for school projects or to their excessive cost. Examples include:

- Environmental Tobacco Smoke Control
- Brownfield Development
- Protect or Restore Habitat
- Innovative Waste Water Technology

Like LEED, the MA-CHPS guidelines will undergo revisions to respond to future changes in the energy code, technological advancements, and feedback from users of the Massachusetts CHPS guidelines.